

The Boulder Valley Employee Survey 1999

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Executive Summary

The Boulder Valley Employee Survey (BVES) is a biennial survey of employees who work within the Boulder Valley. The BVES was designed to tap an important dimension of travel behavior within Boulder, that of employees who work in Boulder, but may not necessarily live here. The first survey of Boulder Valley employees' transportation habits was conducted in the summer of 1991. Follow-up surveys were implemented in the summers of 1993, 1995, 1997 and 1999 so that comparisons could be made to determine changes in work commute characteristics.

Background

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Background

Employees are chosen for inclusion in the survey in two stages: first, companies are randomly selected from within Boulder Valley, and then employees are randomly selected from within the companies that agree to participate.

Of the 528 companies selected for participation in 1999, 270 actually participated, providing a company response rate of 52%. (If the 93 selected companies that were actually out of business are taken out of the calculation, the company response rate would be 62%.) Of the individual employees selected to participate, 63% completed the survey, providing 1,094 completed surveys. The data, once collected, were statistically weighted by company size and location to better represent the Boulder Valley work force. With a sample size of over 1000, the margin of error around the results is approximately 2% per year. Thus, for a difference to be statistically significant between years, there must be a shift of at least 4% (2% around each study year).

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Modal Shift among Boulder Valley Employees, 1991 to 1999

Modal Split 1999

The fundamental purpose of the Boulder Valley Employee Survey is to determine the modal split of work commute trips for those who are employed within Boulder Valley. Over two-thirds of employees surveyed in 1999 (74%) commuted to work by driving alone in a single occupant vehicle (SOV). The next most common mode of transportation used to get to work was multiple occupant vehicles (MOVs, e.g., carpools or vanpools) (9%) followed by bicycling (6%), transit (4%), and walking (3%).

The usual definition of modal split is the percent of trips made by certain modes. Modal split can also be defined using the number of miles traveled. The modal split of miles traveled for the work commute in 1999 was 84% SOV, 9% MOV, 5% transit, 2% bike and 0.3% walking.

Not surprisingly, vehicular travel accounts for a greater proportion of the miles traveled for the work commute. Since 1991, the year of the first administration of the Boulder Valley Employee Survey, the percent of trips to work made via SOV has remained almost constant, ranging from a low of 68% in 1997 to a high of 74% in 1999.

The proportions of employees choosing other modes for the work commute have not changed significantly since 1991, although transit mode share increased from about 2% in 1991 to almost 5% in 1993, where it has stayed to the present. - The mode of transportation used for the work commute of Boulder Valley employees varies by city of residence. In all study years, those who live in cities other than Boulder are more likely to use an SOV (80-85%) for their commute trip, than are Boulder residents (58-65% SOV).

While multiple occupancy vehicle trips (MOVs) increased in 1995 and 1997 (particularly when measured in miles, rather than number of trips), 1999 results show a statistically significant decrease in this mode, mostly in favor of SOV trips. - Over the study period there has been an increase in the proportion of commuting miles traveled via transit by Boulder

Valley employees, up 4% from 1991 levels; from 1.3% of all miles traveled in 1991 to 5.5% in 1997.

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Characteristics of the Work Commute

Trip Length and Duration

The average work commute for Boulder Valley employees in 1999 is 11.6 miles. The average commute duration is about 23 minutes. These have increased by only about one mile and/or two minutes since 1991.

Non-vehicular commutes are, on average, of much shorter distance than automobile or transit trips, and walking commutes much shorter than bike commutes. Average vehicular commutes, both automobile and bus, were over 11 miles in 1999 (ranging from 11.6 miles for MOV trips to 14.3 miles for transit trips), which has been the case since 1993. The average bike commute was less than 3 miles, and the walking commute was about a mile on average. -Carpool or vanpool trips (MOV) tended to be longer than drive alone trips (SOV), about 2 to 3 miles longer on average, from 1993 through 1997 but in 1999 they fell slightly below average SOV trip distances. However, transit trip length has gradually increased from about 8 miles in 1991 to 14 miles in 1999.

Start Time

Over half of Boulder Valley employee commutes started between 7:00 and 9:00 am. There appears to be a gradual shift over time from the early part of this peak (7-8 am) to a slightly later start (8-9 am).

Trip Linking

"Trip linking" refers to those trips made by commuters on the way to or from work. The need to make stops is often given as a reason for driving alone. However, there is a positive side to trip linking; errands run on the way to or from work may mean fewer trips made at other times.

About half of survey participants in all years of the Boulder Valley Employee Study have reported making one or more stops on the way home from work the day prior to completing the survey. -The average number of stops made by employees on the way home from work is one.

Vehicle Occupancy

Average vehicle occupancy for all automobile commutes of Boulder Valley employees was about 1.1, which has been the case throughout the years this study has been conducted.

Multiple passenger vehicle commutes (MOVs) have an average of 2.23 persons per vehicle in 1999, again not much different from the average in previous years (which range from 2.15 to 2.33).

Working at Home and Telecommuting

Single occupancy vehicle use for the work commute can be reduced by eliminating the need for making the trip to work from home. Some people work out of their home, either because they run a business from their home, or because they can telecommute on at least an occasional basis.

About 3% of employees in both 1997 and 1999, and 2% in previous years, reported that they worked at home when asked how they got to work. -Due to the design of this study, in which employees are given the surveys at their worksite, the proportion of employees who may periodically telecommute is most likely underestimated. -In 1995, questions about the telecommuting patterns of employees were added to the study questionnaire. From 1995 through 1999, about 11% of employees surveyed reported that they telecommute at least occasionally.

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Trips Made During the Work Day

An important piece of the picture when looking at employee travel patterns is the number of trips made during the work shift for business or personal reasons. The need to have a vehicle at work for either purpose can influence the commuting mode choice. Further, these trips, if taken by car, add to the congestion in Boulder.

About two-thirds of Boulder Valley workers made at least one trip during the workday, a figure which has remained consistent across study years. -The average number of trips made during the day per employee is about two.

The mode most often used for these trips made during the work day was an SOV (70%). Transit use for workday trips has increased, however, from 1% in 1991 to nearly 3% in 1999.

Some employees are required to run errands during their workday as a part of their job. In 1991 and 1993, just under 40% of workers had to do so. From 1995 through 1999 this proportion increased to over 40% (44% in 1999). -Since 1995 the proportion obliged to use their own vehicle for work related errand trips has increased somewhat. Over one-third of all workers in the Boulder Valley since 1995 ran errands for their job using their own vehicle. -Of those who reported they must use their vehicle at least occasionally for work, until 1999 about 85% in each study year drove alone to get to work. In 1999 this proportion dropped to about 79%. Those who did not run errands for work were somewhat less likely to drive alone to work; only 67% to 75% of these workers in each study year drove alone. -Among those who must run work-related errands but whose employer provides a vehicle, the proportion who drive alone has dropped from 85% in 1991 to 67% in 1999.

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Transit Use

Many programs aimed at reducing SOV travel for the work commute concentrate on increasing transit use. Thus, a section of the Boulder Valley Employee Survey questionnaire is specifically devoted to questions about bus travel.

Study participants were asked how many, if any, one-way trips they had made by bus on the previous day. In 1999, 8.1% of workers reported they had made at least one trip on the bus the day before, compared to 3.4% in 1991. -The number of trips per day by bus riders has remained fairly constant at about 2 trips.

Respondents who had ridden the bus were asked whether the purpose of these bus trips was work-related or for other reasons. Between 60 and 80 percent of all bus trips were work-related across the study years.

Eco-Pass Participation

In the 1997 implementation of the survey, employees were asked whether or not they had an Eco-Pass. Eco-Pass availability has increased from 14% in 1997 to about 20% in 1999.

Employees with an Eco-Pass were much more likely to have ridden the bus for their commute than those without an Eco-Pass; 13% of Eco-Pass holders had taken the bus compared to 2% of non-Eco-Pass employees. -Survey participants who did not have an Eco-Pass were asked why they did not. The most common reasons given were that they wouldn't ride the bus even if they had one, or that their company does not offer one.

Distance from Home to Nearest Bus Stop

Between 26 and 30% of study participants reported they lived less than two blocks from a bus stop, in each study year and about another 30% had a bus stop within 2 to 5 blocks from their home.

Distance to a bus stop from employees' homes has changed little over the study period.
Use of the HOP and SKIP

In 1997 and 1999 employees were asked about their use of Boulder's small, frequent bus services, the HOP and SKIP. Ridership in 1999 was about 12% for each service.
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Factors Influencing Modal Choice

Need to Transport Children to Child Care

The need to transport children to and from child care is a factor influencing employees' mode choice for their work commute. In 1999 a series of questions about child care were included in the survey.

Results indicate that 12% of the employees have children in out-of-home care and 90% of these respondents report being responsible for transport of their child(ren) at least some of the time. -Although there was very little difference in reported SOV use for the work commute between those transporting children and those who did not (about 74% for each group), 32% of those with child care transport responsibilities said they "definitely" would use other travel modes if they didn't have children to get to and from child care.

Other factors influencing mode choice

Many demographic and employment characteristics were measured as a part of the Boulder Valley Employee Survey. The association of these characteristics with travel choices was statistically tested.

Not surprisingly, the single most important factor affecting whether or not a respondent drove alone to work was whether or not a car was available for commuting. -Other important factors were: city of residence, employee needed own vehicle at work to run errands for job, employee made stops on the way from work, location of employee's workplace (greater distance work to home associated with greater SOV use), employee's hourly wage (alternate modes used more by lower wage employees), and size of company (smaller companies have more SOV use).

Eco-Pass status was also associated with travel choices, as employees with an Eco-Pass were more likely to have used alternate modes. This may be because employees who are more likely to ride the bus have obtained an Eco-Pass, or that possession of an Eco-Pass encourages alternate mode use.

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